

CLAIMS

1. A rotary ring system for use in scale reading apparatus comprising:
 - 5 a rotary ring, provided with scale marks on a surface thereof, defining a pattern and readable by a readhead of such apparatus;
 - at least one intermediate member;
 - wherein the at least one intermediate member is 10 fitted between the rotary ring and the part of the machine on which the rotary ring is mounted.
2. A rotary ring system according to any preceding claim wherein applying a force to one of the at least 15 one intermediate member and rotary ring adjusts the effective radius of the rotary ring.
3. A rotary ring system according to claim 2 wherein said force is applied to said at least one intermediate 20 member.
4. A rotary ring system according to any of claims 3 or 3 wherein the force is an axial force.
- 25 5. A rotary ring system according to any of claims 3 or 4 wherein applying a force to the at least one intermediate member causes deformation of the at least one intermediate member.
- 30 6. A rotary ring system according to any of claims 3-5 wherein applying a force to the at least one intermediate member causes adjustment in the effective external radius of the at least one intermediate member.

7. A rotary ring system according to any of claims 3-6 wherein retaining means are provided to retain the at least one intermediate member on the rotary part of the machine and wherein said force is applied to the said 5 at least one intermediate member by said retaining means.

8. A rotary ring system according to any of claims 1-4 and 6-7 wherein the at least one intermediate member 10 is provided with at least one tapered surface such that when the rotary ring and the at least one intermediate member are mounted on a part of the machine at least one tapered surface of the at least one intermediate member is in contact with a tapered surface of one or 15 both of the rotary part of the machine and the rotary ring.

9. A rotary ring system according to claim 8 wherein an axial force may be applied to one of the at least 20 one intermediate member and rotary ring such that the tapered surface of the at least one intermediate member and the tapered surface of one or both of the part of the machine and the rotary ring move relative to one another, causing adjustment in the effective radius of 25 the rotary ring.

10. A rotary ring system according to any preceding claim wherein the at least one intermediate member is compliant.

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11. A rotary ring system according to claim 10 wherein the at least one intermediate member is tangentially compliant.

12. A rotary ring system according to any preceding claim wherein the rotary ring is a continuous ring.

13. A rotary ring system according to any of claims 1-5 wherein the rotary ring system comprises a split ring.

14. A rotary ring system according to any of claims 1-10 wherein the rotary ring system comprises a plurality of segments.

15. A rotary ring system according to any preceding claim wherein the at least one intermediate member is flexible.

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16. A rotary ring system according to any preceding claim wherein the at least one intermediate member comprises a plurality of ball shaped members.

20 17. A rotary ring system according to any of claims 1-15 wherein the at least one intermediate member comprises a plurality of rollers.

25 18. A rotary ring system according to any of claims 1-15 wherein the at least one intermediate member comprises a spring.

30 19. A rotary ring system according to any preceding claim wherein anchor means are provided to prevent rotation of the rotary ring relative to the part of the machine.

20. A rotary ring system for use in scale reading apparatus comprising:

- a rotary ring, provided with scale marks on a surface thereof, defining a pattern and readable by a readhead of such apparatus;
- 5 at least one intermediate member;
- wherein the at least one intermediate member is fitted between the rotary ring and the part of the machine on which the rotary ring is mounted;
- 10 and wherein applying a force to said at least one intermediate member adjusts the effective radius of the rotary ring.
21. A rotary ring system for use in scale reading apparatus comprising:
- a rotary ring, provided with scale marks on a surface thereof, defining a pattern and readable by a readhead of such apparatus;
- 15 at least one intermediate member;
- wherein the at least one intermediate member is fitted between the rotary ring and the part of the machine on which the rotary ring is mounted;
- 20 and wherein the at least one intermediate member is tangentially compliant.